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Title of Document Transmitted:	**BRIEF OF APPELLANTS AND AUTHORIZATION TO CHARGE DEPOSIT ACCOUNT IN THE AMOUNT OF $500 FOR FILING FEE.**
Applicants:	Daniel Pettigrew et al.
Serial No.:	09/780,642
Filed:	February 9, 2001
Group Art Unit:	2623
Title:	IMAGE DATA PROCESSING WITH COLOR MODIFICATION
Our Ref. No.:	G&C 30566.136-US-01

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By: [signature]
Name: Jason S. Feldmar
Reg. No.: 39,187
JSF/sjm

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By: [signature]
Name: Jason S. Feldmar
Reg. No.: 39,187
JSF/sjm

Due Date: March 27, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of:	)	
	)	
Inventor: Daniel Pettigrew et al.	)	Examiner: Jingge Wu
	)	
Serial #: 09/780,642	)	Group Art Unit: 2623
	)	
Filed: February 9, 2001	)	Appeal No.: ________
	)	
Title: IMAGE DATA PROCESSING WITH COLOR MODIFICATION	)	

BRIEF OF APPELLANTS

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR §41.37, Appellants hereby submit the Appellants' Brief on Appeal from the final rejection in the above-identified application, as set forth in the Office Action dated September 27, 2005.

Please charge the amount of $500 to cover the required fee for filing this Appeal Brief as set forth under 37 CFR §41.37(a)(2) and 37 CFR §41.20(b)(2) to Deposit Account No. 50-0494 of Autodesk Canada Inc., the assignee of the present application. Also, please charge any additional fees or credit any overpayments to Deposit Account No. 50-0494.

I. REAL PARTY IN INTEREST

The real party in interest is Autodesk Canada Inc., the assignee of the present application.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences for the above-referenced patent application.

III. STATUS OF CLAIMS

Claims 1-30 are pending in the application.

Claims 1, 10-11, 20-21, and 30 have been rejected under 35 U.S.C. §112, first paragraph.

Claims 1-8, 10-18, 20-28, and 30 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,504,551 to Takashima et al.

Claims 9, 19, and 29 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

The above rejections are being appealed.

IV. STATUS OF AMENDMENTS

No amendments to the claims have been made subsequent to the final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Color warping is a process where color attributes of an image (or areas of an image) are modified in some way (e.g., to compensate for camera or film color distortions and special effects) (see page 1, lines 9-14).

Independent claims 1, 10, 11, 20, 21, and 30 are generally directed to easily warping the color of image data (see page 8, lines 6-10). Specifically, the claims each provide for identifying input received from a user (see page 10, line 27-page 11, line 11). The input is used to identify a colour vector (see page 11, lines 2-4, and 12-15) and a luminance range (see page 11, lines 1-2, 4-6, and 12-15) for the colour vector. The claims provide that the identification of the luminance range is performed independently of the identification of the colour vector (see page 11, lines 1-11). In this regard, two separate identifications are performed through user input.

FIG. 8 provides:

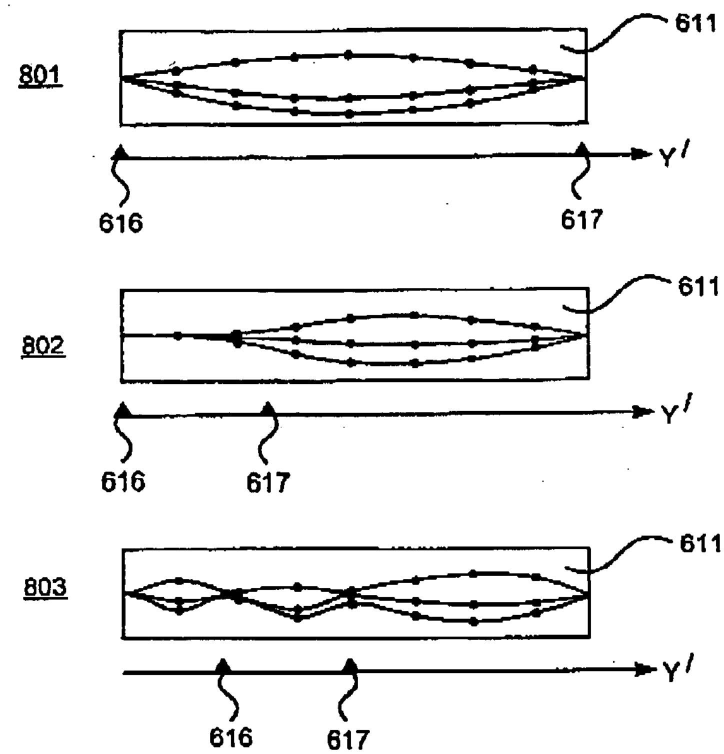

Fig.8

The text on page 9, lines 11-18 describes the color vector in FIGS. 6-8:

> The color vector graph 611 has three components, one each for red 612, green 613 and blue 614. These components can be made to vary in their proportions as a function of luminance 615. For any given luminance Y', the red, green and blue values add up to give a total of one. At either end of the graph 611, the color vector is zero, and the three curves converge to a common value of one third. The vertical axis of the graph is scaled in such a way that one third appears as half the maximum color displacement.

The text on page 10, line 27-page 11, line 11 describes FIG. 8 and the manipulation of the color vectors and luminance range:

> Examples of the types of color vector functions that can be achieved are shown in their graph form 611 in FIG. 8. With the range markers 616, 617 set to luminance values of zero and one

> respectively, color vectors defined by user manipulation of the trackball 618 cause a general change to the red, green and blue color curves, as shown at 801. With the maximum marker 617 moved to a luminance of one quarter, changes can then be made to the curves over a selected small range of luminance, with no changes to the curves outside this range, as shown at 802. After multiple iterations of range selection and color vector addition, complex curves can be created, as shown at 803. The level of complexity shown at 803, however, can be built up extremely quickly due to the nature of the interface provided.

Thus, as set forth in the claims, the luminance range is established using range markers 616 and 617 by the user. Once established, the user can then (separately and independent from setting the range markers), set/identify the colour vectors (i.e., curves in the figures) using a trackball.

Once the colour vector and luminance range are identified, the claims provide for defining a color vector function (in response to the identifying) (see page 11, line 12 - page 12, line 12). Thereafter, the colours in the image are modified in response to the luminance values with reference to the colour vector (see page 12, lines 8-12, page 16, lines 8-18, page 17, lines 15-16).

Dependent claims 2, 12, 22 depend on claims 1, 11, and 21 respectively and further provide that the colour vector function is defined by points on a curve (see page 9, lines 3-10).

Dependent claims 3, 13, and 23 depend on claims 1, 11, and 21 respectively and further provide that the color vector function is animated (see page 8, lines 18-25).

Dependent claims 4, 14, and 24 depend on claims 1, 11, and 21 respectively and further provide that the colour vector function is defined by applying the identified color vector to a previously defined colour vector function (see page 11, lines 12-19).

Dependent claims 5, 15, and 25 depend on claims 1, 11, and 21 respectively and further provide that the colour vector function is expressed as a look up table addressable by luminance values of image colour data (see page 14, lines 9-23).

Dependent claims 6, 16, and 26 depend on claims 1, 11, and 21 respectively and further provide that the colour vector function defines red, green, and blue displacements with reference to barycentric coordinates (see page 11, lines 20-23).

Dependent claims 7, 17, and 27 depend on claims 1, 11, and 21 respectively and provide that the user controls the image processing using a graphical user interface on a monitor. Further, the claims provide that the user interface includes a plurality of widgets that facilitate user

communication with processes for modifying colour values (see page 9, line 21- page 10, line 4).

Dependent claims 8, 18, and 28 depend on claims 7, 17, and 27 further providing that the colour vector is identified with reference to a user input of coordinates from a 2D trackball widget where the dimensions controllable from the trackball are dimensions of pure color (see page 9, line 21-page 10, line 4; page 15, line 15-page 16, line 8).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 10-11, 20-21, and 30 stand rejected under 35 U.S.C. §112, first paragraph for lack of enablement.

Claims 1-8, 10-18, 20-28, and 30 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,504,551 to Takashima et al.

VII. ARGUMENT

A. Claims 1, 10-11, 20-21, and 30 are Enabled Under 35 USC §112.

On page (3) of the Office Action, independent claims 1, 10-11, 20-21, and 30 were rejected under 35 U.S.C. § 112, first paragraph for lack of enablement. Specifically, the rejection provides that the specification does not reasonably provide enablement for identifying luminance range independently from identifying the color vector. The Office Action states that in figs. 6-8 and supporting specification page 10-13, the color vector and luminance range are in the one coordination system and luminance range can determine the color correction of the color vector. The Office Action continues and states that there is only a dependent relationship in fig. 6 and no independence of each other.

Appellants respectfully disagree. Appellants refer to FIGS. 6, 7, and 8. More specifically, Appellants refer to FIG. 8 as described above in the Summary of the Invention. As can be seen in the text supporting FIG. 8 (i.e., page 9, lines 11-18 and page 10, line 27-page 11, line 11), the range markers 616 and 617 may be moved and set the luminance range. The setting of such range markers does not immediately affect the graph of FIG. 8. After setting the range markers, the color vectors/curves (e.g., each curve in graph 611) can be changed using a trackball to manipulate the red, green, and blue vectors. Thus, the user identifies the luminance range (i.e., by moving the range

markers 616 and 617) independently from identifying the color vector (i.e., by using the trackball to manipulate the curves).

The final Office Action submits that there is only a dependent relationship. Appellants note that the claims do not specify that the luminance range is independent from the colour vector. Instead, the claims specifically provide that the luminance range is identified by the user independently from the identifying of the colour vector. Such language clearly provides that the user uses a separate/independent operation to identify the luminance range than the operation used to identify the colour vector. In this regard, the user identifies the luminance range using the markers and the color vector by manipulating the curve with the trackball. Each such acts are performed independently from each other. Thus, there is clear support in the specification for the independent identification set forth in the claims.

In response to some of the above arguments, the Advisory Action provides:

> 1) regarding 112 rejection, the citation of Applicant expressly mention "three components can be made to vary in their proportions ass a function of luminance". If luminance is the function of color components as cited, how can the luminance range is independent from the color vector?. Furthermore, nowhere the cited portion expressly or impliedly mention the claimed language. Finally, one can change luminant range marks 616 and 617. the curves/color vectors are changed accordingly see figs 801-803 or vice versa. Therefore, 112 rejection and specification object are proper and maintained.

Appellants respectfully disagree with the Advisory Action. Again, as stated above, the claims do not provide that the luminance range is independent from the color vector. Instead, the claims provide that the luminance range and colour vectors are identified separately/independently. In addition, the above cited text clearly describes such an independent identification as set forth in the claims.

With respect to the comments that changing the luminant markers 616 and 617 changes the color vectors/curves as illustrated, the Advisory Action is misinterpreting the figures. Again, the text on page 10, line 27-page 11, line 11 describes FIG. 8:

> Examples of the types of color vector functions that can be achieved are shown in their graph form 611 in FIG. 8. With the range markers 616, 617 set to luminance values of zero and one respectively, color vectors defined by user manipulation of the trackball 618 cause a general change to the red, green and blue color curves, as shown at 801. With the maximum marker 617 moved to a luminance of one quarter, changes can then be made to the curves over a selected small range of luminance, with no changes to the curves outside this range, as shown at 802. After multiple iterations of range selection and color vector addition, complex curves can be created, as shown at 803. The

level of complexity shown at 803, however, can be built up extremely quickly due to the nature of the interface provided.

As clearly described, the luminance ranges is set using the markers 616 and 617. The figures do not illustrate such ranges as changing the curves. Instead, once the range markers are set, a trackball can be used to change the colour vectors/curves (i.e., each curve in graph 611). Graphs 801, 802, and 803 show the results after performing multiple independent modifications to the range markers and colour vectors (see the above cited text). In this regard, graph 802 illustrates that with the range markers set at 616 and 617, the user can modify the curves using the trackball within the range. Graph 803 illustrates complex curves that result from multiple iterations of range selection and color vector addition. Thus, contrary to that asserted in the Advisory Action, graphs 801-803 do not illustrate merely moving the range markers and resulting curves. Instead, the figures illustrate the result after numerous independent identifications as set forth in the claims.

In view of the above, Appellants respectfully request reversal of the rejections under 35 U.S.C. §112.

B. The Independent Claims Are Patentable Over The Prior Art

On page (4) of the final Office Action, claims 1-8, 10-18, 20-28, and 30 were rejected under 35 U.S.C. §102(e) as being anticipated by Takashima et al., U.S. Patent No. 6,504,551 (Takashima).

Specifically, the independent claims were rejected as follows:

> As to claim 1 (as best understanding of the Examiner), Takashima discloses Apparatus for processing image data comprising:
>
> storage means for storing instructions (fig. 1 12);
>
> memory means for storing the instructions during execution and for storing image data (fig. 1 13);
>
> processing means (fig. 1, 11) and display means (fig. 1, 14) for allow user to interact and modify the color values, wherein,
>
> identifying, through input from a user, a color vector (Pi) and luminance range (BL and WL) for said color vector (fig. 3a, col. 16 lines 31-52), wherein said luminance range is identified by the user independently from the identifying of the color vector (col. 16 line 66-col. 17 line 25);
>
> defining a color vector function (equation 1) in response to said identifying (col. 17, lines 5-32);
>
> modifying colors in response to the luminance values with reference to the color vector function (fig. 2-fig. 3B, col. 16 line 66-col. 17 line 35).

> As to claims 10, 11-18, 20, 21-28 an 30, the limitations are addressed with regard to claim 1-9, (note that updating the color vector function is inherent when user either choosing other Ps or inputting luminance ranges).

Appellants traverse the above rejections. Specifically, Takashima does not teach, disclose or suggest a user identifying a luminance range independently from identifying a color vector.

Takashima merely describes the color of plural pixels making up a source video image corrected by a computer 10, a hard disc device 20 and a picture processing device 30. The computer 10 functions as a parameter setting unit for setting plural parameters for designating the source color and the destination color and a computing unit for computing correction data for color correction from the source color to the destination color using the plural parameters set by the parameter setting unit. The hard disc device 20 stores the source video image and effects color correction in the picture processing device 30 for correcting the color of a pixel corresponding to the source color contained in the source video image to the destination color. (See Abstract).

However, Takashima lacks any discussion about independently identifying a luminance value and a colour vector. Instead, Takashima teaches away from Appellants' invention because it describes the modification of a characteristic curve of a color signal which includes the modification of the black level and white level (see col. 16, lines 31-52).

In rejecting the claimed element of identifying the colour vector and luminance range, the Office Action relied on FIG. 3A and the text in column 16, lines 31-52. FIG. 3A provides:

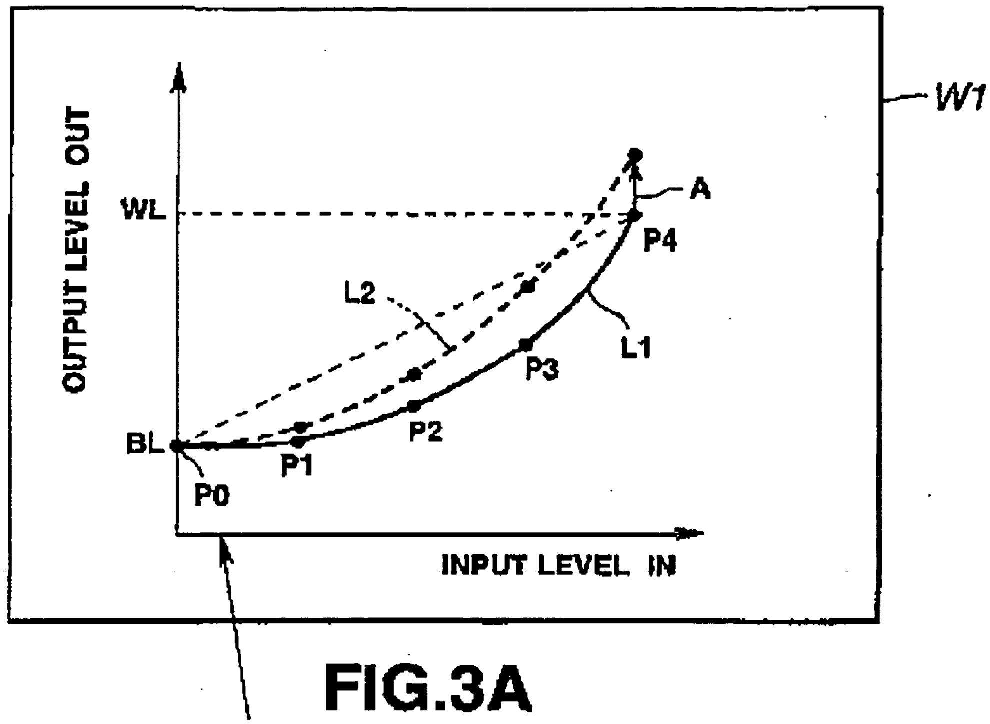

FIG.3A

The cited text describes FIG. 3A and provides that the beginning point P0 and the terminal point P4 denote the black level BL and white level WL, with the curvature of the curve denoting gamma. Accordingly, the luminance black and white levels are identified on the curve itself as the end points. The text describes how the operator can modify the curve by grabbing individual points including the beginning point P0 and terminal point P4. In this regard, Appellants note that instead of identifying the luminance range independently from the colour vector, Takashima identifies the white level and black level simultaneous with and as part of the identification of the characteristic colour curve. Accordingly, unlike the present claims which provide for an independent identification of the luminance range (e.g., by moving range markers 616 and 617) and the colour vectors 612-614, Takashima provides for a single motion that affects both the characteristic color curve and the luminance values. Not only does such a description fail to teach, describe, or suggest, implicitly or explicitly, the present invention, but it teaches away from practicing the present invention as claimed.

In response to the above arguments, the final Office Action relies on col. 16, line 66-col. 17, line 25 and stated:

> Examiner disagrees. In fact, Takashima expressly mentions that image correction (modifying) means for determining the characteristic curve (color vector) through inputting black level and while level (luminance range) by a user (col. 16 line 66-col. 17 line 25).

However, the cited text still fails to teach the user, through input means, identifying the luminance range independently from identifying the colour vector. Instead, the text states that the user can input numerical values for the black level, white level and gamma to modify the display of the characteristic curve (see col. 17, line 1-4). The cited text continues and explicitly states that the output signal level is then calculated by the CPU based on the black level that is input and a window is then formed to display the curve L1 (see col. 17, lines 5-8 and 20-22). The cited text reinforces Appellants arguments in that the black and white levels are not identified independently (by the user) from the color vector but as part of the color vector. In other words, instead of the claimed independent identification, Takashima requires an integrated identification where the black and white luminance values are identified as part of and with the curve itself. In this regard, there is no independent identification by the user but the color vector curve is modified by the user with the black and white levels. While the present claims provide the ability to independently identify a luminance range (e.g., using the range markers) from the color vector (e.g., using the track ball to modify the color vector itself), Takashima has a display as illustrated in FIG. 3A that clearly does not allow the user to adjust the black and white levels independently from the color vector. Instead, if the black and white values are adjusted, the curve itself is modified as part of the black/white value adjustment. Accordingly, instead of independent identification, Takashima teaches an integrated and dependent identification (the opposite of the present claims).

While Appellants agree that Takashima's curve can be determined through inputting black and white levels (e.g., using numerical entries), such an identification is not independent from identifying the color vector. Instead, such input is part of identifying the color vector and Takashima provides no mechanism for independently identifying the black and white levels from the curve itself. As can be seen in the text describing FIG. 3A, when the user tries to change the black and white levels (by adjusting points P0 and P4), the curve is modified with it (see col. 16, lines 53-65). In this regard, there is no capability to independently establish or identify the black and white

levels separate from the curve itself. Instead, the black and white levels are integrated with and part of Takashima's curve. The ability to specify numerical values for the endpoints does not alter the fact that Takashima's black and white levels are still identified as part of the curve. Again, there is no capability to identify the black and white level separately and independently from the curve itself. Accordingly, Takashima's teaching does not and cannot teach, describe or suggest, the present invention, implicitly or explicitly.

In addition, Appellants submit that the various elements of Appellants' claimed invention together provide operational advantages over the systems disclosed in Takashima. Further, Appellants' invention solves problems not recognized by Takashima.

In response to the above arguments, the Advisory Action provides:

> ...2) Regarding Takashima, Takashima expressly mention "this allows the CPU qq to set input/output characteristic variably responsive to the actuation by the operator. The CPU 11 can form a display picture so as to accepte numerical inputs for alternative of black level Bl, white leve W1 and gamma r to modify the display..." (col. 16, line66-col. 17line4, which is clearly read on the claimed language. In addition, Takashima transforms colors into Y, U, V, thus it is possible to independently correctly color or luminance. Applicant's arguments based on "independence" that is not diclosed in the specification (see (1)). Therefore, the rejection is maintained.

As stated above, col. 16, line 66-col. 17, line 4 merely reinforces Appellants arguments. The text provides:

> This allows the CPU 11 to set input/output characteristics variably responsive to the actuation by the operator. The CPU 11 can form a display picture so as to accept numerical inputs for alternative values of the black level BL, white level W1 and gamma .gamma. to modify the display of the characteristic curve by these numerical inputs.

As can be seen, this text merely provides that the CPU can accept numerical inputs to set the black and white levels. However, this portion of text also provides that such input <u>modifies the display of the characteristic curve by the inputs</u>. Accordingly, rather than independently identifying the numerical inputs from the curve, the numerical inputs are identified as part of the curve itself. In other words, when the numerical inputs are entered, the curve is directly modified. Such a relationship between BL, WL and the curve very clearly illustrates a dependent relationship and not an independent identification as claimed.

The advisory action continues and states that Takashima transforms colors into Y, U, V, and therefore it is possible to independently correctly color or luminance. It is unclear what the Advisory Action is asserting in this statement. In this regard, transforming colors into Y, U, and V

does not relate to identifying (through user input) a luminance range for a color vector independently from identifying (through user input) the color vector itself. The claims specifically set forth the various elements for identifying both the luminance range and the color vector. Takashima fails to teach these various elements.

With respect to the "independence" assertions set forth in the Advisory Action, Appellants have addressed the limitations and support in the specification above.

In view of the above, Appellants respectfully request reversal of the rejections of the independent claims.

C. Dependent Claims 2, 12, and 22 Are Not Separately Argued

D. Dependent Claims 3, 13, and 23 Are Patentable Over The Prior Art

Dependent claims 3, 13, and 23 depend on claims 1, 11, and 21 respectively and further provide that the color vector function is animated (see page 8, lines 18-25). Such animation as set forth in the specification provides that the color warp gradually changes over the duration of a clip. Nonetheless, even without such meaning, Takashima completely fails to even remotely describe the animation of a function whatsoever.

In rejecting these claims, the final Office Action relies on fig. 3A, L1 and L2 and that users can move, change, and operate on the curves. However, regardless of whether users can move, change, and operate on a curve, animation of a color vector function is not provided. Animation does not mean and is not even remotely suggested merely by the ability to operate on a curve. Even taking a standard dictionary definition of the term animate: To impart motion or activity to (see American Heritage Dictionary, Fourth edition, 2000), the ability to change and operate on a curve does not impart motion or activity into the curve. Instead, the user is merely changing the curve and is not putting motion or activity into the curve.

In view of the above, under either a dictionary definition or as the term is used in the specification, Takashima completely fails to teach dependent claims 3, 13, and 23. Accordingly, Appellants respectfully request reversal of the rejections.

E. Dependent Claims 4-7, 14-17, and 24-27 Are Not Separately Argued

F. Dependent Claims 8, 18, and 28 Are Patentable Over The Prior Art

Dependent claims 7, 17, and 27 depend on claims 1, 11, and 21 respectively and provide that the user controls the image processing using a graphical user interface on a monitor. Further, the claims provide that the user interface includes a plurality of widgets that facilitate user communication with processes for modifying colour values (see page 9, line 21- page 10, line 4). Dependent claims 8, 18, and 28 depend on claims 7, 17, and 27 and further provide that the colour vector is identified with reference to a user input of coordinates from a 2D trackball widget where the dimensions controllable from the trackball are dimensions of pure color (see page 9, line 21-page 10, line 4; page 15, line 15-page 16, line 8).

Thus, claims 8, 18, and 28 provide that a trackball is used to control dimensions of pure color as part of the colour vector identification.

In rejecting these claims, the final Office Action relies on fig. 3A-B, col. 16, line 31-col. 17, line 32. Appellants respectfully traverse this assertion. Firstly, the text completely fails to even remotely describe the use of a trackball. In this regard, an electronic search of Takashima for the term "track" provides no results whatsoever. Accordingly, without even mentioning the work "track" or "trackball", Takashima cannot possibly render the present claims (that explicitly recite the use of a trackball) non-novel.

Further, the claims explicitly recite that the dimensions that are controllable using the trackball are dimensions of pure color. Instead of teaching such a trackball color control, Takashima merely describe the use of a mouse to modify points on a curve. As illustrated in FIG. 3A-3B, such points are for black and white levels and are not for controlling pure color as set forth in the claims. Accordingly, Takashima completely fails to teach, disclose, or suggest, implicitly or explicitly, the invention set forth in these claims.

VIII. CONCLUSION

In light of the above arguments, Appellants respectfully submit that the cited references do not anticipate nor render obvious the claimed invention. More specifically, Appellants' claims recite novel physical features which patentably distinguish over any and all references under 35 U.S.C. §§ 102 and 103. As a result, a decision by the Board of Patent Appeals and Interferences reversing the Examiner and directing allowance of the pending claims in the subject application is respectfully solicited.

Respectfully submitted,

GATES & COOPER LLP

Attorneys for Appellant(s)

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By: [signature]
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JSF/

G&C 30566.136-US-01

APPENDIX

1. Apparatus for processing image data comprising:

storage means for storing instructions;

memory means for storing said instructions during execution and for storing image data;

processing means for performing image processing in which said image data is processed to modify colour values; and

display means for facilitating user interaction with said image processing, wherein

said processing means is configured wherein, in response to said instructions, said image data is processed by the steps of:

identifying, through input from a user, a colour vector and a luminance range for said colour vector, wherein said luminance range is identified by the user independently from the identifying of the colour vector;

defining a colour vector function in response to said identifying; and

modifying colours in response to said luminance range with reference to said colour vector function.

2. Apparatus according to claim 1, wherein said colour vector function is defined by points on curves.

3. Apparatus according to claim 1, wherein said colour vector function is animated.

4. Apparatus according to claim 1, wherein said colour vector function is defined by applying said identified colour vector to a previously defined colour vector function.

5. Apparatus according to claim 1, wherein said colour vector function is expressed as a look up table addressable by luminance values of image colour data.

6. Apparatus according to claim 1, wherein said colour vector function defines red, green and blue displacements with reference to barycentric co-ordinates.

7. Apparatus according to claim 1, wherein the user performs operations to control said image processing with reference to a graphical user interface presented on a monitor, said interface including a plurality of widgets for facilitating user communication with said processes for modifying colour values.

8. Apparatus according to claim 7, wherein said identification of a colour vector is performed with reference to a user input of co-ordinates from a two-dimensional trackball widget, in which the dimensions controllable from said trackball are dimensions of pure colour.

9. Apparatus according to claim 7, wherein said colour vector is displayed as a graph having three lines, one for each of red, green and blue colour components, said graph having a first axis indicative of colour vector and a second axis of luminance.

10. Apparatus for processing image data comprising:

storage means storing instructions;

memory means for storing said instructions during execution and image data;

processing means for performing image processing in which said image data may be processed to modify colour values; and

monitor means for facilitating user interaction with said image processing, wherein:

said processing means is configured wherein, in response to said instructions, said image data is processed by a first step of:

initialising a colour vector function, in which colour vector is a function of luminance;

and then repeated steps of:

identifying, through input from a user, a colour vector and a luminance range for said colour vector, wherein said luminance range is identified by the user independently from the identifying of the colour vector;

updating said colour vector function with said identification;

processing source image data to identify luminance values;

modifying source image colour in response to said identified source luminance values with reference to said colour vector function; and

previewing said modified source image.

11. A method of processing image data in an image processing system, wherein the image processing system comprises memory means for storing instructions and image data, processing means for performing image processing in which said image data is processed to modify colour values,

said instructions defining colour modifying operations to be performed by said processing means to process said image data, wherein said operations comprise:

identifying, through input from a user, a colour vector and a luminance range for said colour vector, wherein the luminance range is identified by the user independently from the identifying of the colour vector;

defining a colour vector function in response to said identification, in which colour vector is a function of luminance;

processing source image data to identify luminance values; and

modifying colours in response to said luminance values with reference to said colour vector function.

12. A method according to claim 11, wherein said colour vector function is defined by points on curves.

13. A method according to claim 11, wherein said colour vector function is animated.

14. A method according to claim 11, wherein said colour vector function is defined by applying said identified colour vector to a previously defined colour vector function.

15. A method according to claim 11, wherein said colour vector function is expressed as a look up table addressable by luminance values of image colour data.

16. A method according to claim 11, wherein said colour vector function defines red, green and blue displacements with reference to barycentric co-ordinates.

17. A method according to claim 11, wherein the user performs operations to control said image processing with reference to a graphical user interface presented on a monitor, said interface including a plurality of widgets for facilitating user communication with said processes for modifying colour values.

18. A method according to claim 17, wherein said identification of a colour vector is performed with reference to a user input of co-ordinates from a two-dimensional trackball widget, in which the dimensions controllable from said trackball are dimensions of pure colour.

19. A method according to claim 17, wherein said colour vector is displayed as a graph having three lines, one for each of red, green and blue colour components, said graph having a first axis indicative of colour vector and a second axis of luminance.

20. A method of processing image data in an image processing system, wherein the image processing system comprises memory means for storing instructions and image data, processing means for performing image processing in which said image data is processed to modify colour values,

said instructions defining colour modifying operations to be performed by said processing means to process said image data, wherein said operations include a first step of:

initialising a colour vector function, in which colour vector is a function of luminance;

and then repeated steps of:

identifying, through input from a user, a colour vector and a luminance range for said colour vector, wherein the luminance range is identified by the user independently from the identifying of the colour vector;

updating said colour vector function with said identification;

processing source image data to identify luminance values;

modifying source image colour in response to said identified source luminance values with reference to said colour vector function; and previewing said modified source image.

21. A computer-readable medium having computer-readable instructions executable by a computer configurable for image processing, said computer comprising memory means for storing said

instructions and image data, processing means for performing image processing in which said image data is processed to modify colour values,

said instructions defining operations to be performed by said processing means to process said image data, wherein said operations comprise:

identifying, through input from a user, a colour vector and a luminance range for said colour vector, wherein the luminance range is identified by the user independently from the identifying of the colour vector;

defining a colour vector function in response to said identification, in which colour vector is a function of luminance;

processing source image data to identify luminance values; and

modifying colours in response to said luminance values with reference to said colour vector function.

22. A computer-readable medium according to claim 21, wherein said colour vector function is defined by points on curves.

23. A computer-readable medium according to claim 21, wherein said colour vector function is animated.

24. A computer-readable medium according to claim 21, wherein said colour vector function is defined by applying said identified colour vector to a previously defined colour vector function.

25. A computer-readable medium according to claim 21, wherein said colour vector function is expressed as a look up table addressable by luminance values of image colour data.

26. A computer-readable medium according to claim 21, wherein said colour vector function defines red, green and blue displacements with reference to barycentric co-ordinates.

27. A computer-readable medium according to claim 21, wherein the user performs operations to control said image processing with reference to a graphical user interface presented on a monitor, said interface including a plurality of widgets for facilitating user communication with said processes for modifying colour values.

28. A computer-readable medium according to claim 27, wherein said identification of a colour vector is performed with reference to a user input of co-ordinates from a two-dimensional trackball widget, in which the dimensions controllable from said trackball are dimensions of pure colour.

29. A computer-readable medium according to claim 27, wherein said colour vector is displayed as a graph having three lines, one for each of red, green and blue colour components, said graph having a first axis indicative of colour vector and a second axis of luminance.

30. A computer-readable medium having computer-readable instructions executable by a computer configurable for image processing, said computer comprising memory means for storing said instructions and image data, processing means for performing image processing in which said image data is processed to modify colour values,

said instructions defining operations to be performed by said processing means to process said image data, wherein said operations include a first step of:

initialising a colour vector function, in which colour vector is a function of luminance;

and then repeated steps of:

identifying, through input from a user, a colour vector and a luminance range for said colour vector, wherein said luminance range is identified by the user independently from the identifying of the colour vector;

updating said colour vector function with said identification;

processing source image data to identify luminance values;

modifying source image colour in response to said identified source luminance values with reference to said colour vector function; and

previewing said modified source image.